

# AUTOMATED APPARATUS AND METHOD FOR FRUIT TESTING

## I. ABSTRACT OF DISCLOSURE

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5 An intrusion plunger type fruit tester provides an electrically powered motor carrying an encoder to sense rotary velocity of its drive shaft and present the data though a feed-back circuit to an associated computer that regulates input power to the motor to maintain a predetermined rotary velocity of the rotor. Power is transmitted from the motor drive shaft through a speed reducing transmission to a ball screw motion translator that interconnects a plunger through a strain block to move the plunger lineally into a fruit to be tested. The force required for plunger penetration at predetermined data points in its trajectory is measured by plural bridge interconnected strain gauges carried by the strain block and the force and plunger position data is transmitted to the associated computer. Computer software controls plunger motion through feedback circuitry, determines plunger position and records and processes resistive pressure to plunger motion at predetermined intervals. The associated computer provides data storage, display and analysis. The resistance to plunger motion is determinable to 0.016 pound and plunger position is determinable to at least one part in 32,000 per lineal inch. Methods of

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